

SUT SOUTH WEST EVENING MEETING – 29 NOVEMBER 2018 - PLYMOUTH

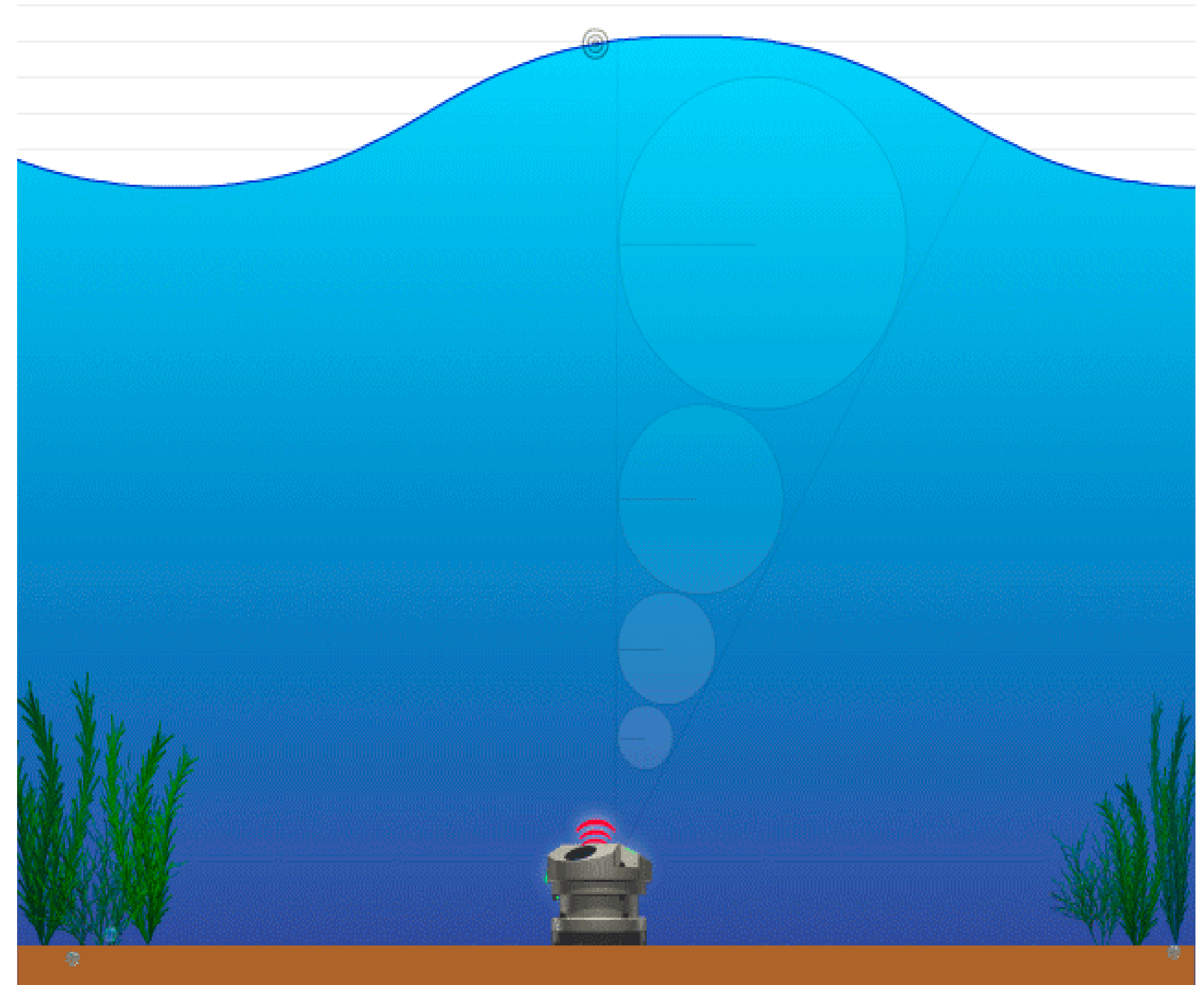
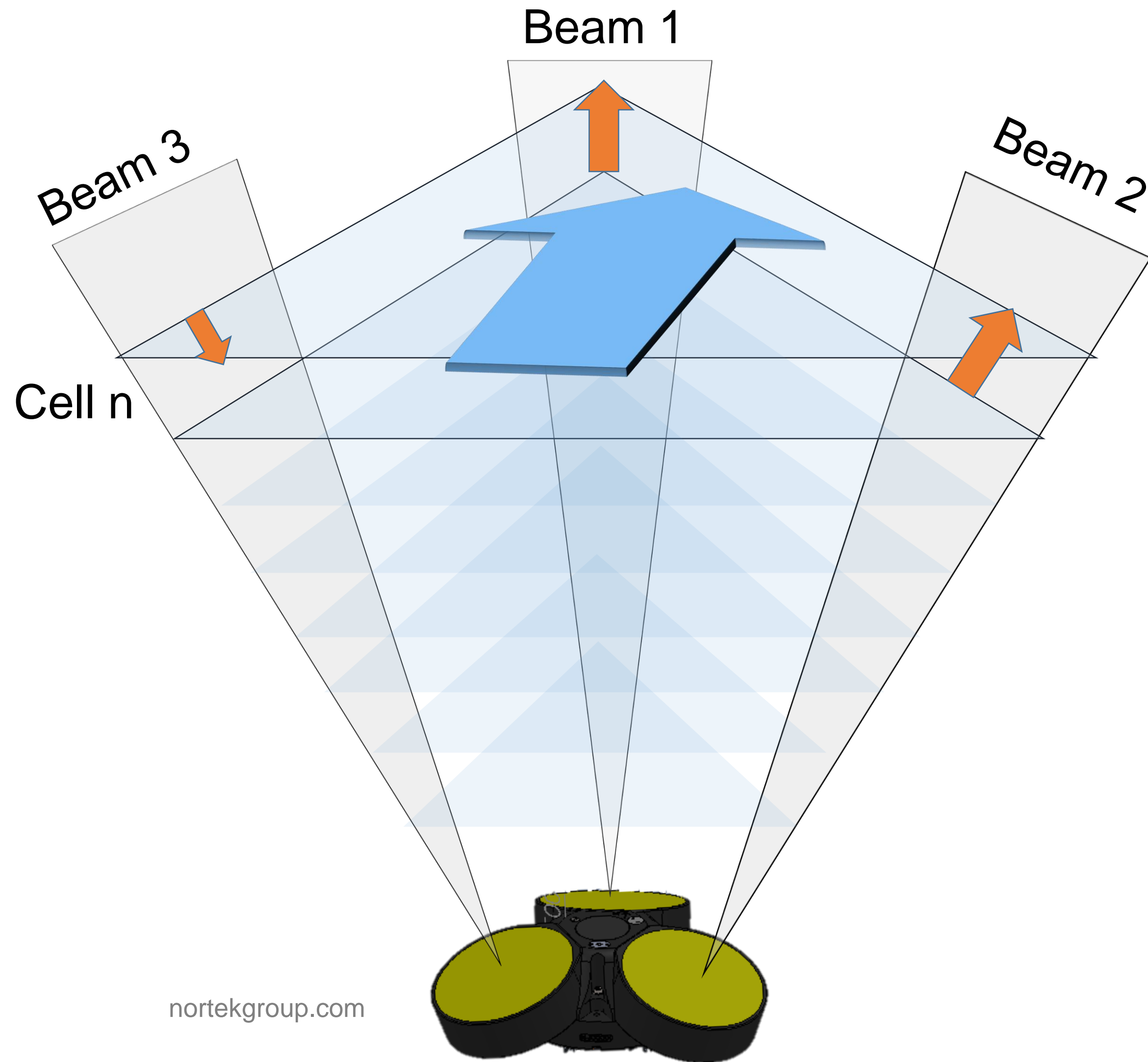
Metocean Measurements from ADCPs

CLAIRE CARDY, DIRECTOR, NORTEK UK

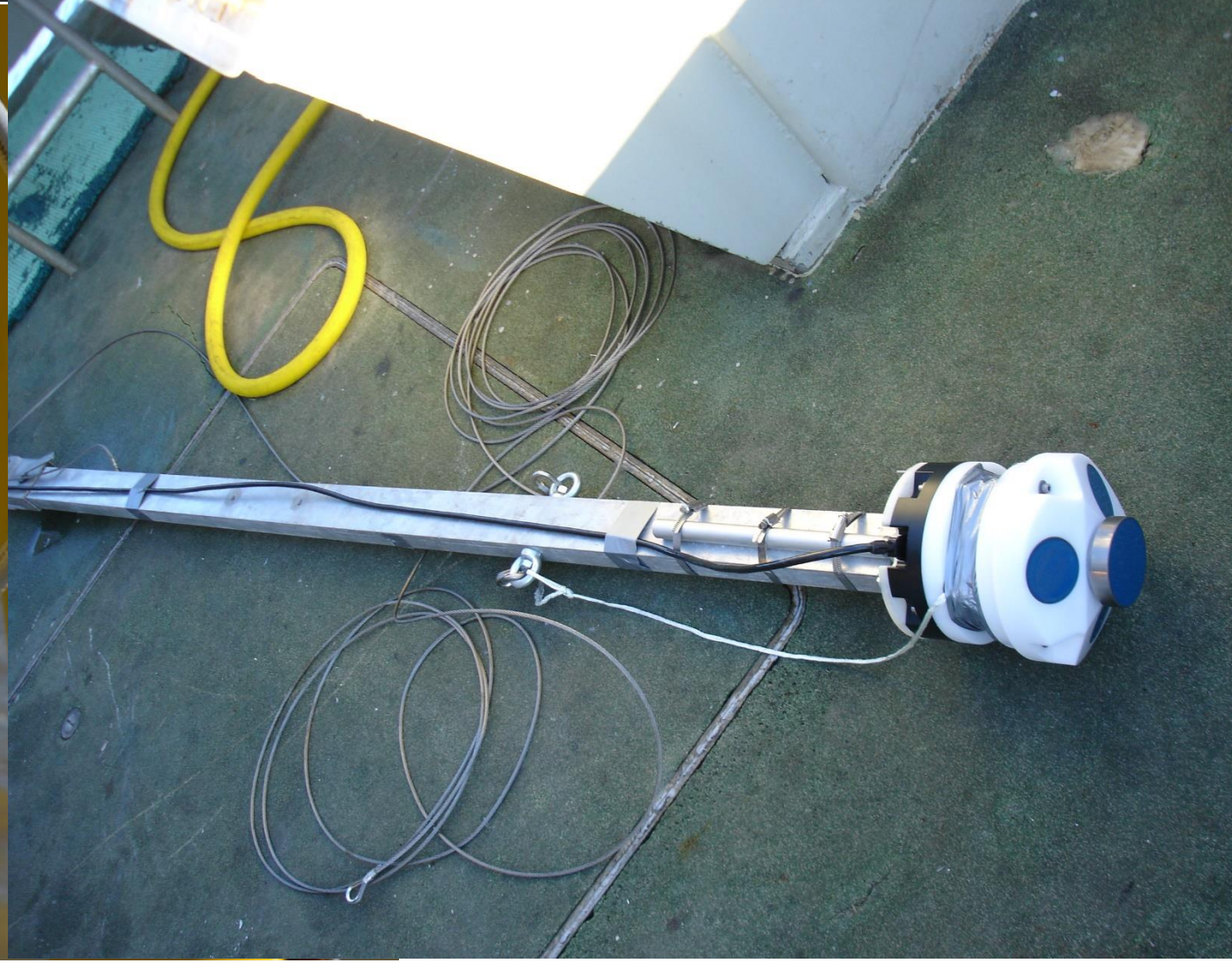
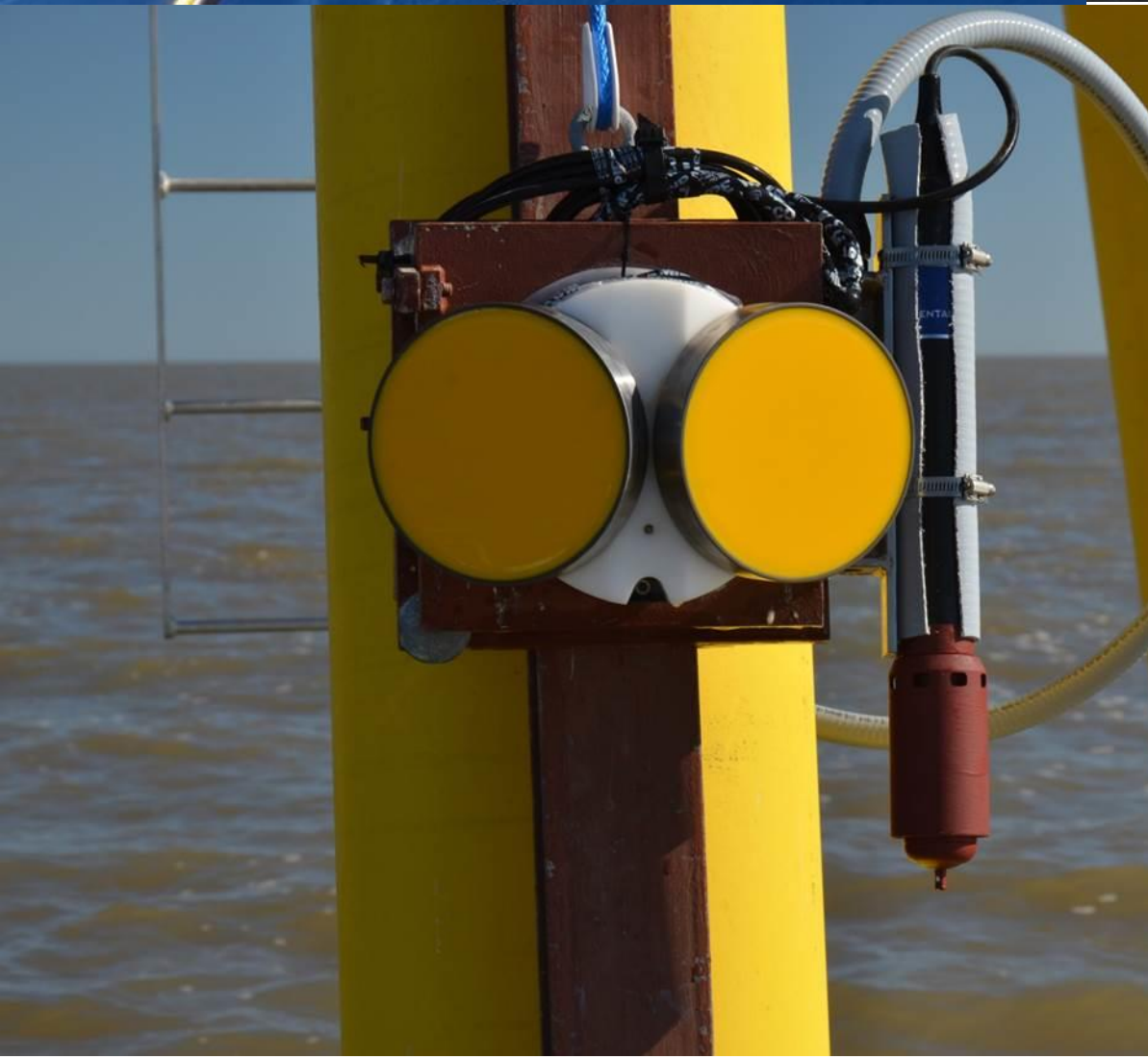
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What are ADCPs, How do they work?



How are ADCPs used?



Advances in Marine Measurements:

- The latest generation of ADCPs -



Nortek's Signatures

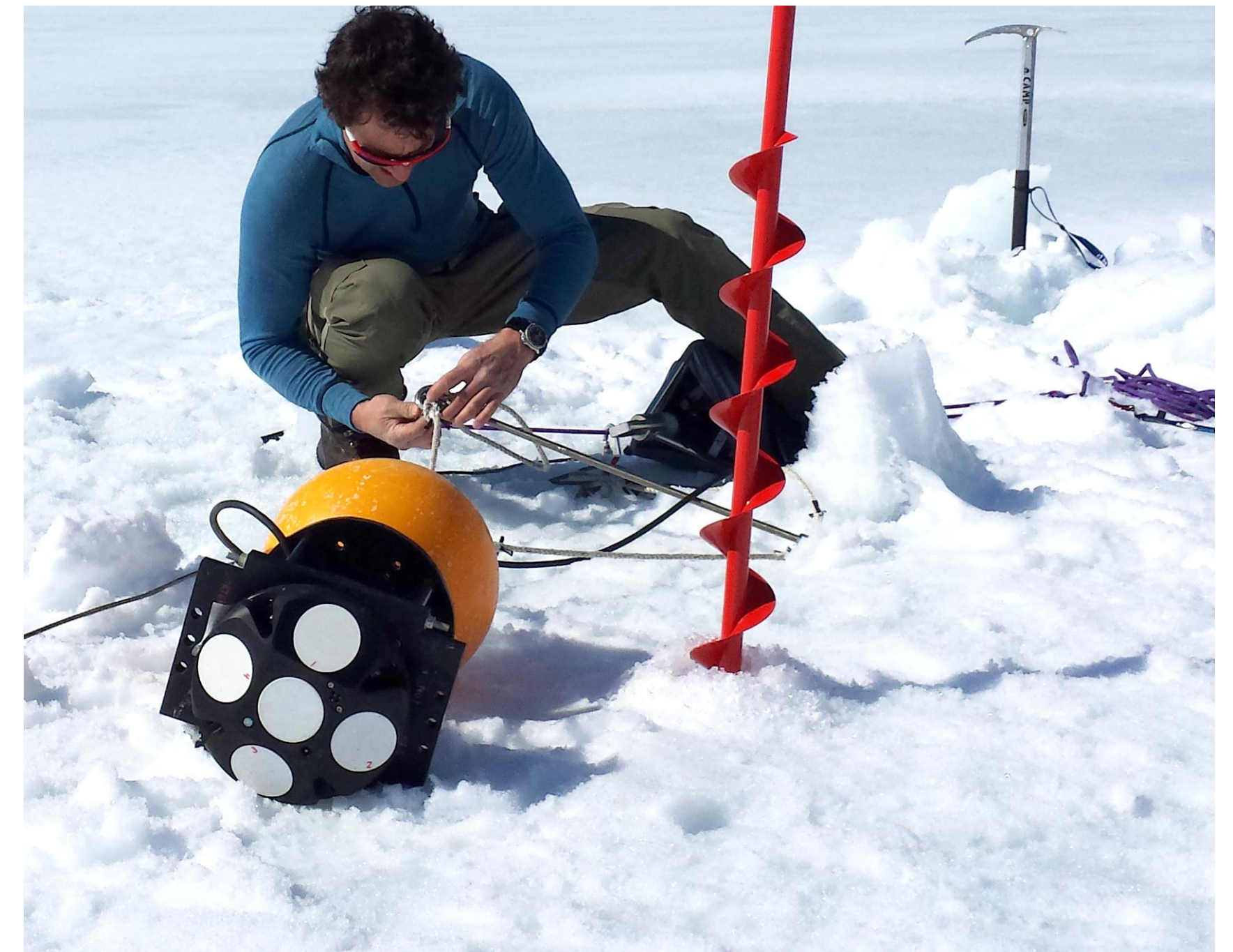
Nortek's Signature ADCPs

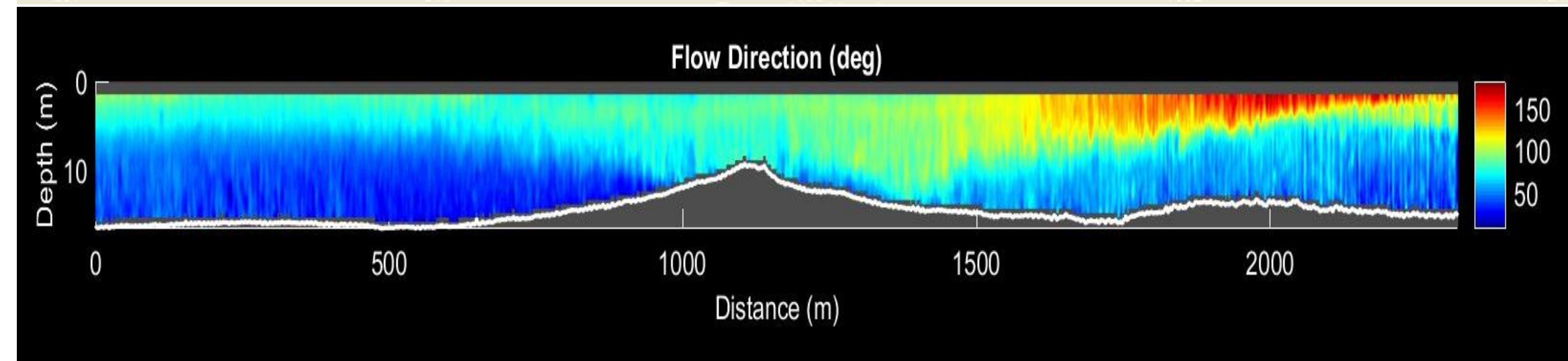
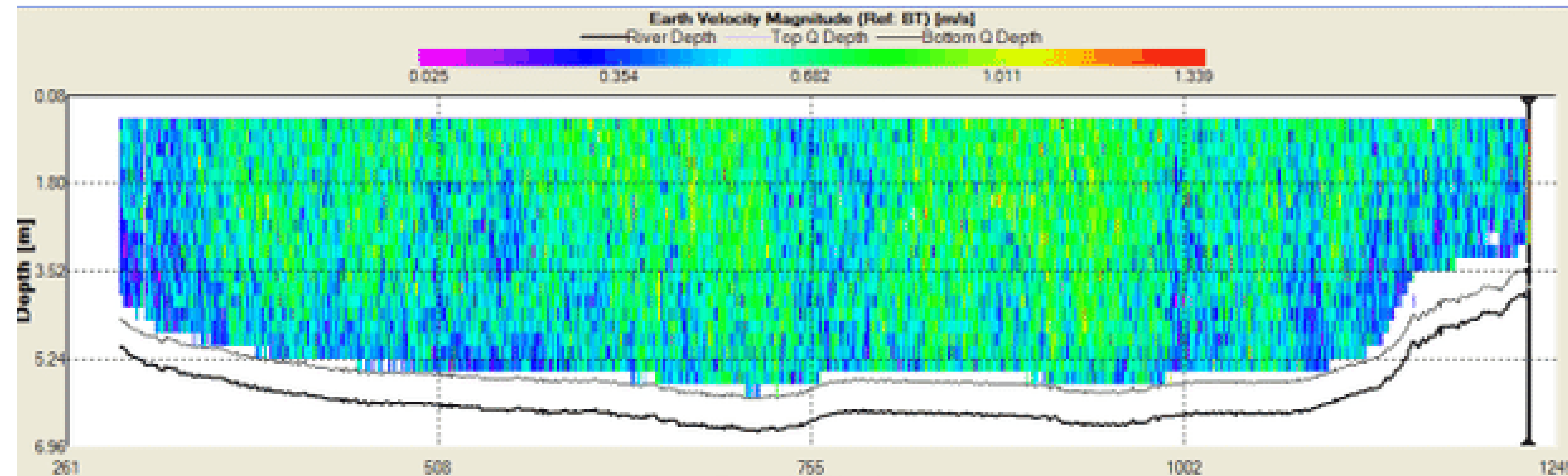
Why are these ADCPs different?

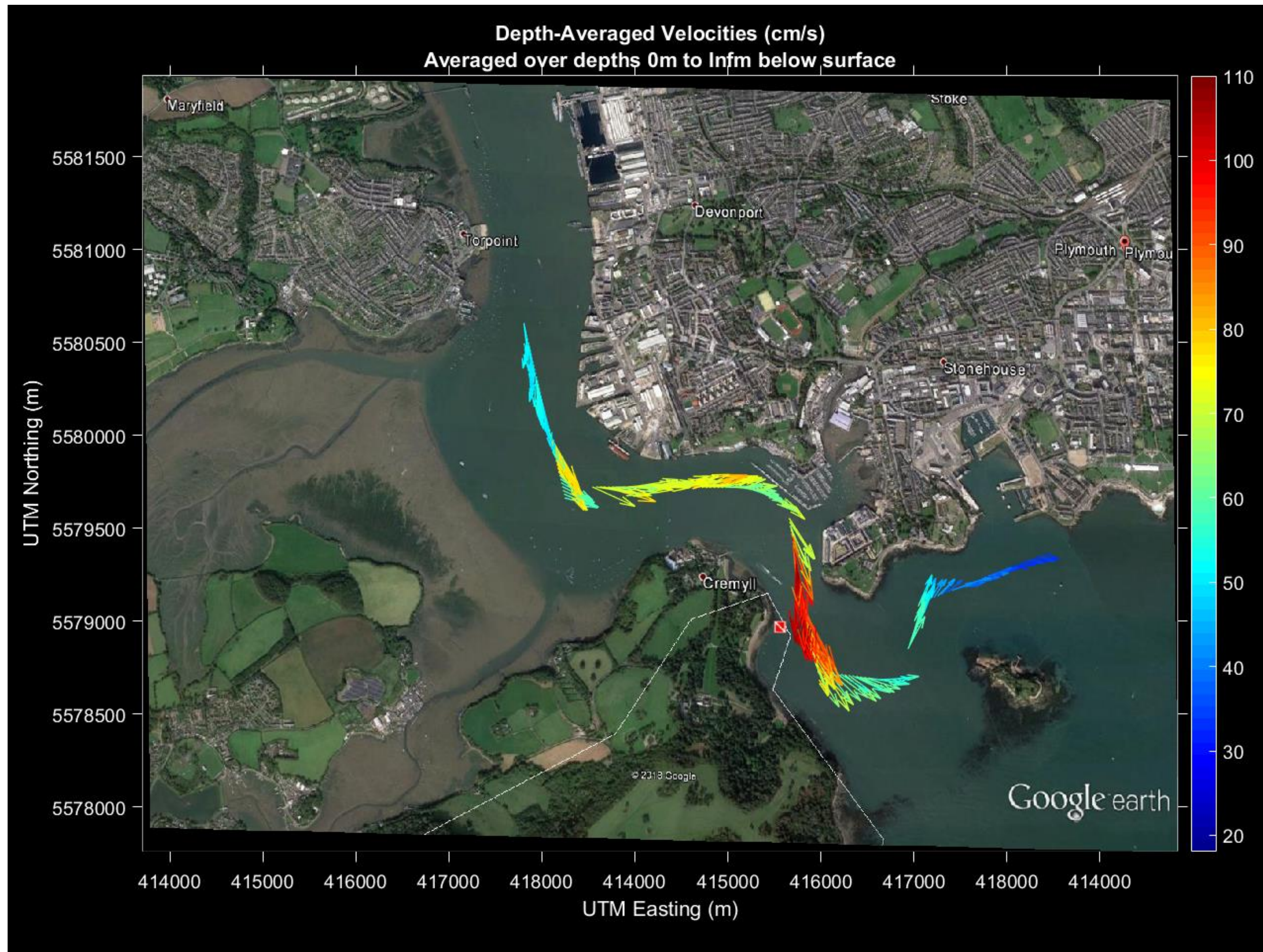


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Size
Processing methods
Power
Sampling Rate
Metocean parameters
Application Specific



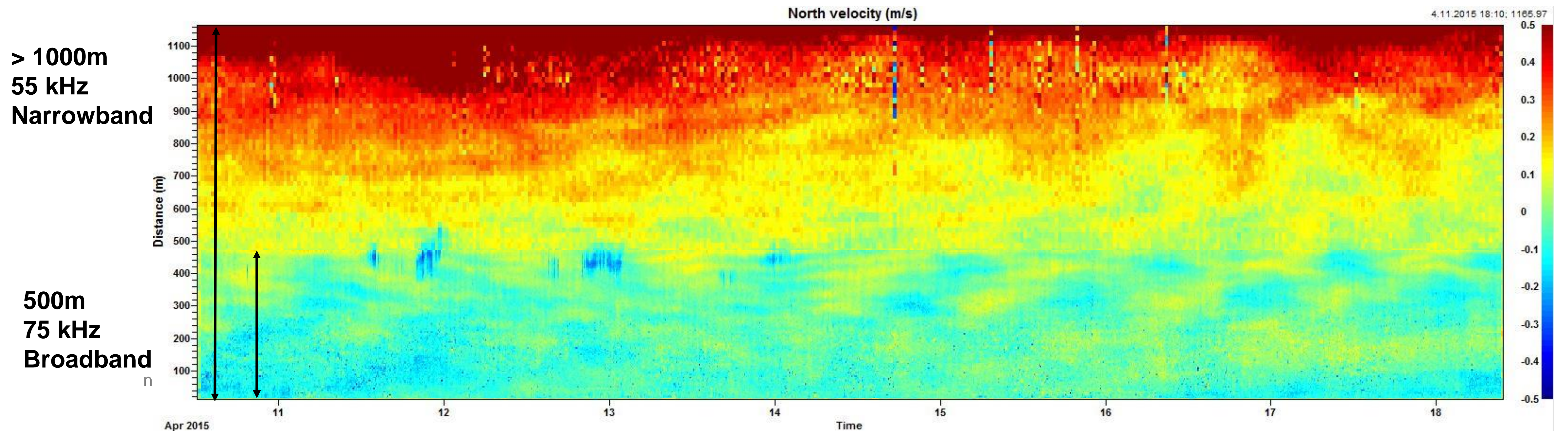
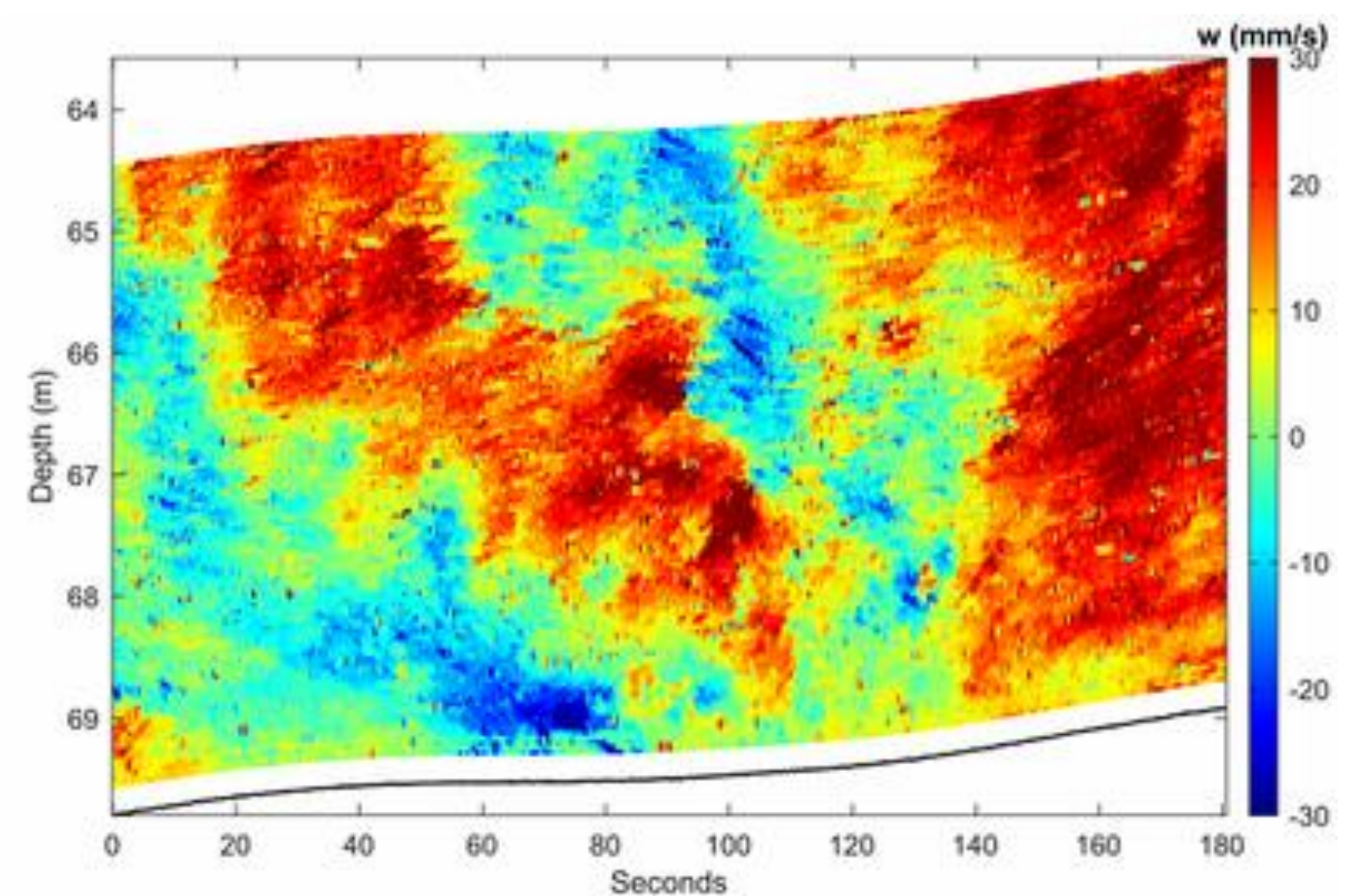




Metocean Parameters

What can the Signatures measure?

- Average, Burst and High Resolution Currents
- Wave height and direction, Ice draft and drift
- Backscatter - echosounder

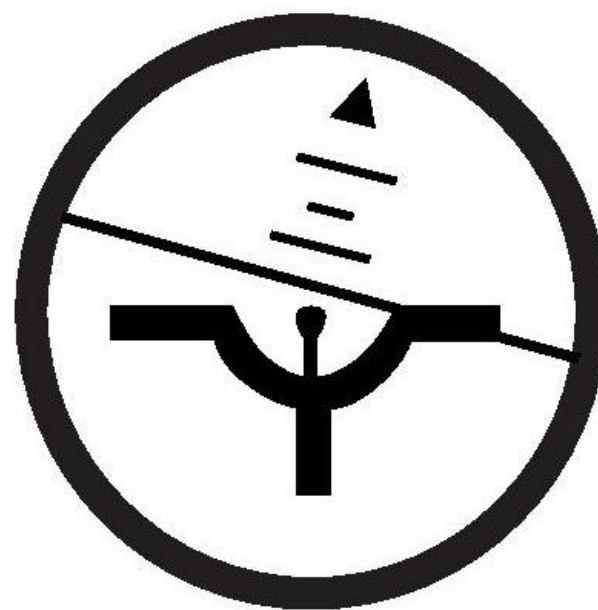


Improving current measurements

Surface buoys

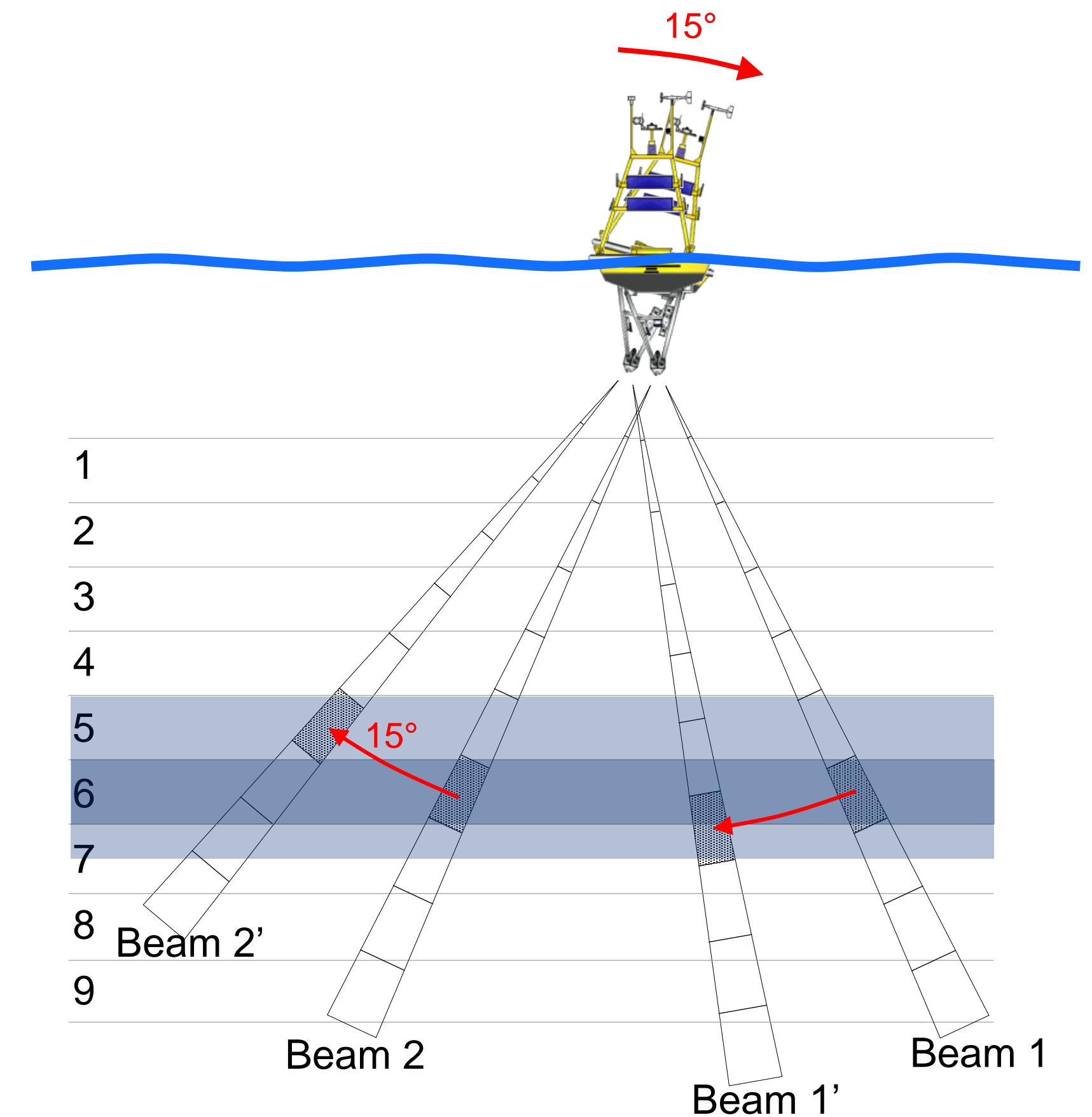


ADCP



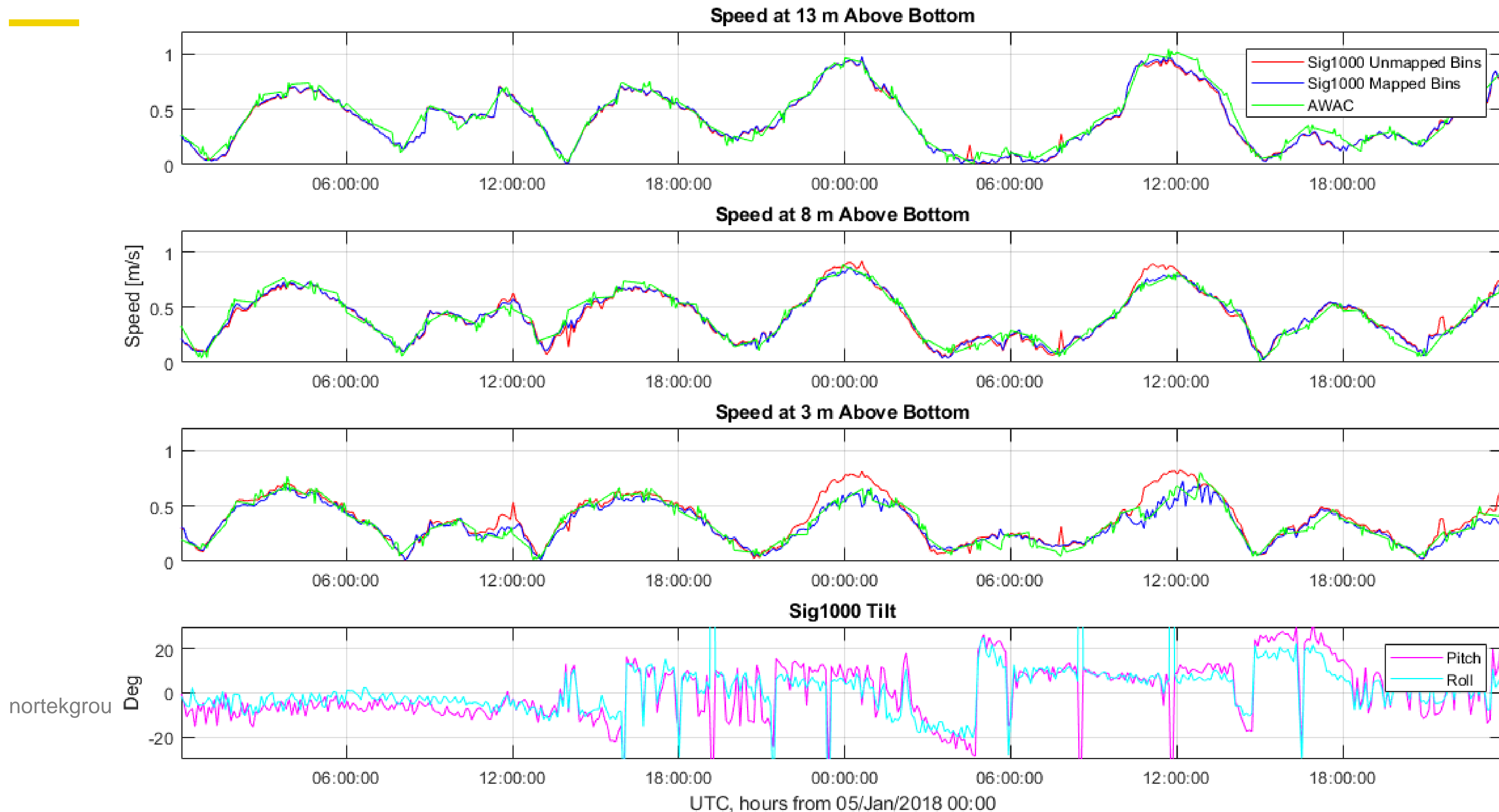
AHRs

1. Addition of Attitude and Heading Reference Sensor (AHRs)
 - Accelerometer + Magnetometer + Gyroscope
 - High response rate (100 Hz)
2. Real-time bin mapping on ping-by-ping basis
3. Precise ping timing by sampling AHRs during receipt of returned signal



Improving current measurements

Surface buoys



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Enabling New Technology

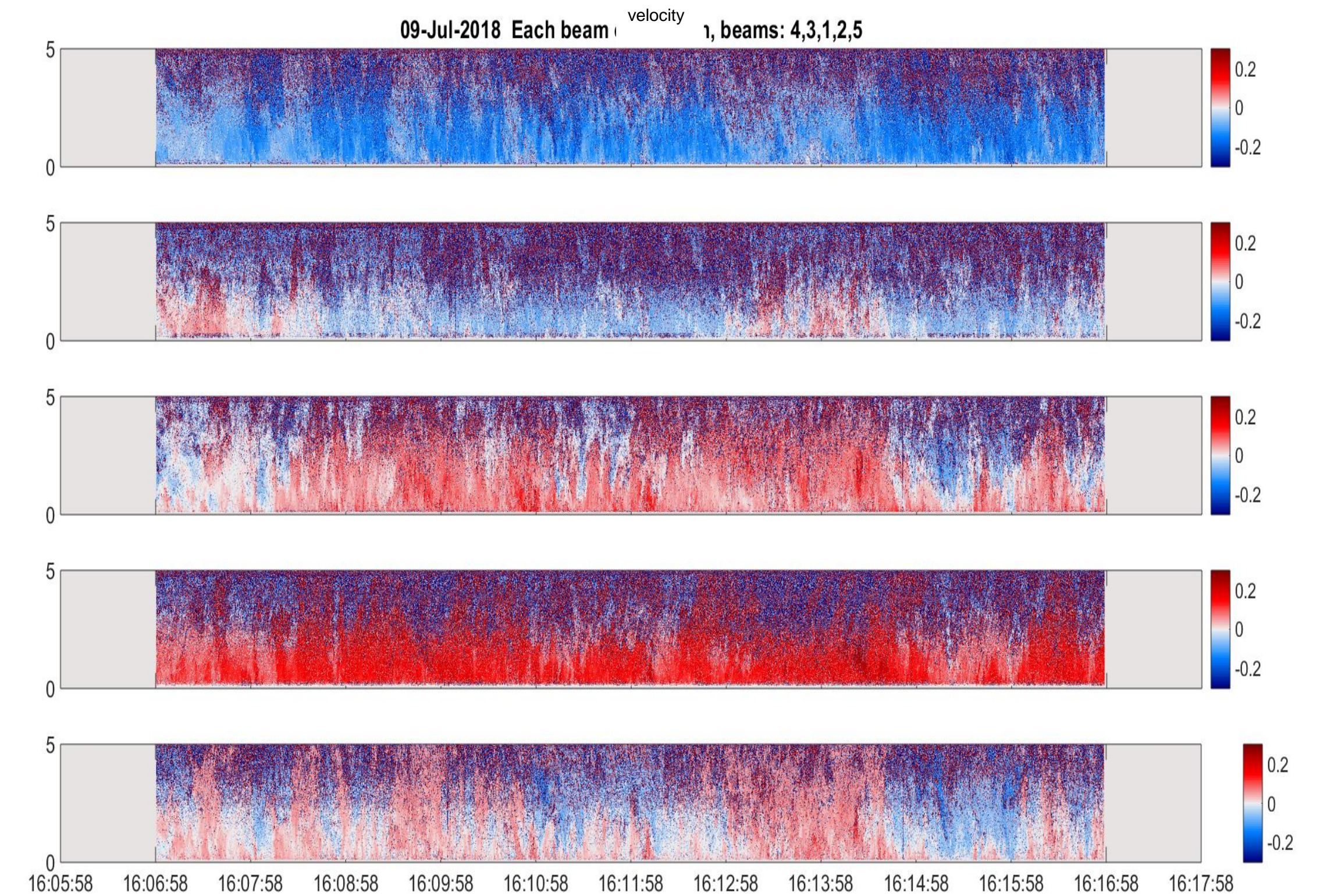
Marine Autonomy and Vessels



- Size
- Payload
- ADCP Requirements
- Interfacing
- On board data storage
- Online data transmission
- Navigation
- Speed of Vehicle
- **Each vehicle is different = customised solutions**

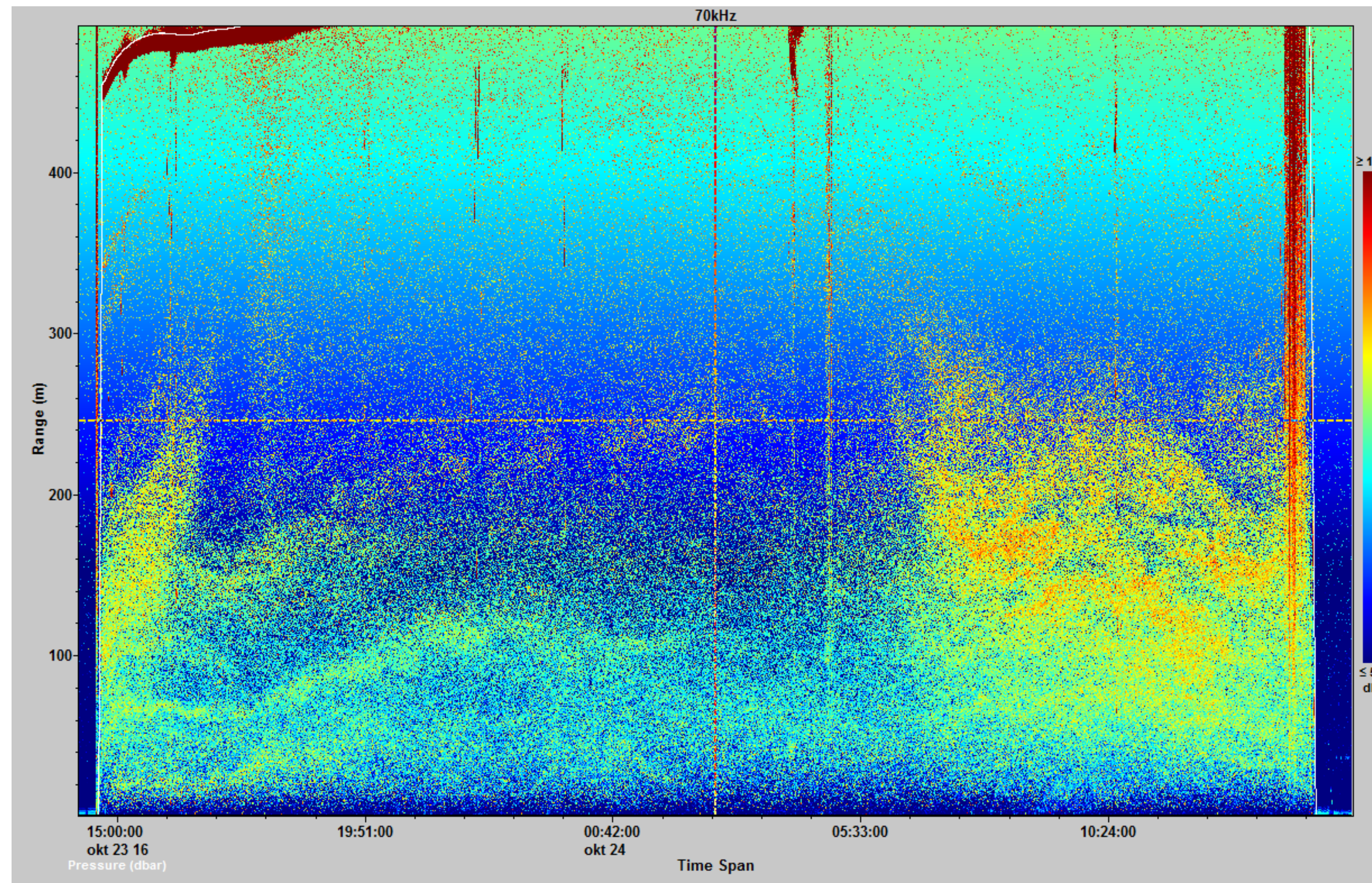
Improving Understanding of Processes

Turbulence



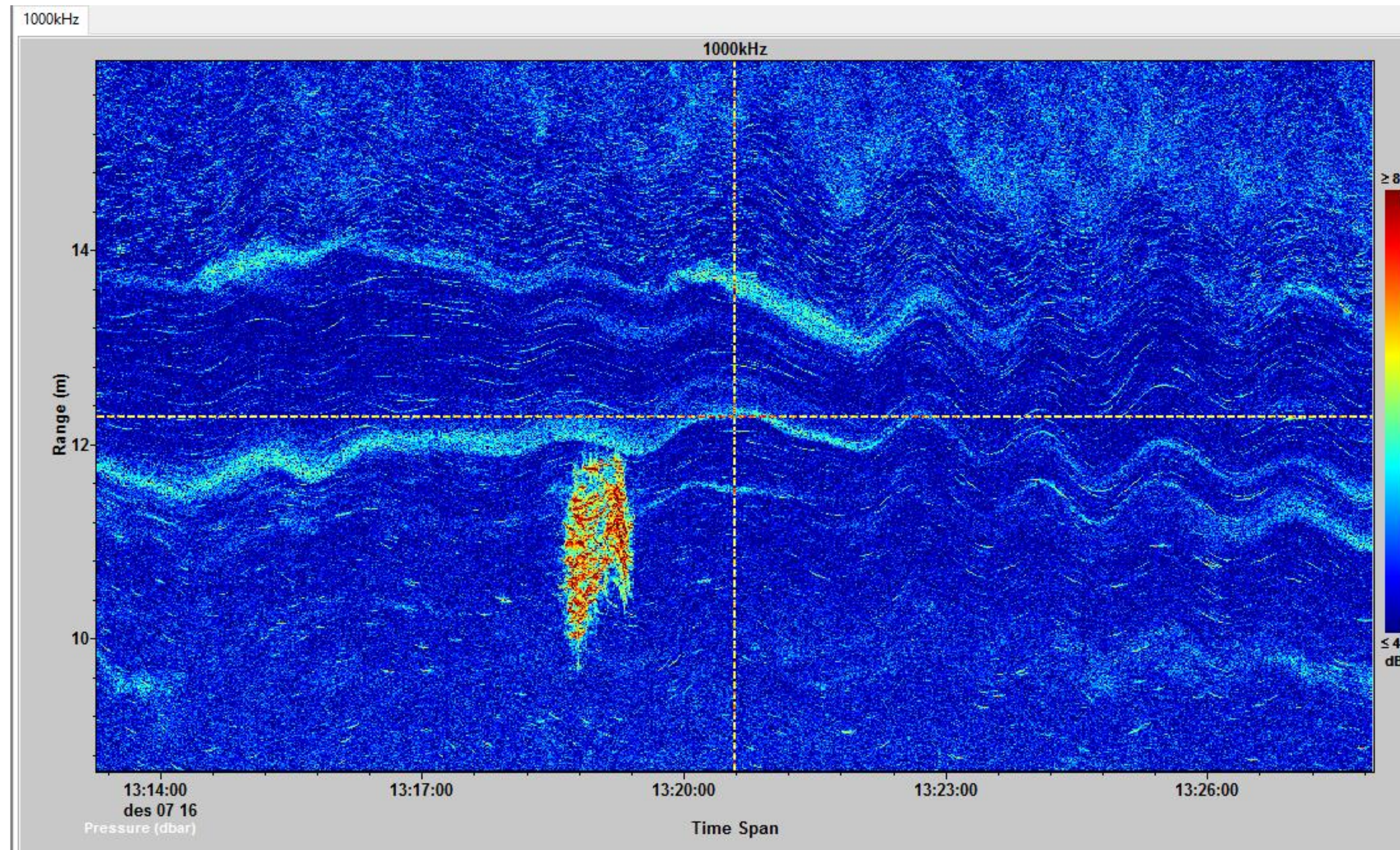
Improving Understanding of Processes

Biological Studies



Improving Understanding of Processes

Multidisciplinary Projects



Summary

Metocean Measurements from ADCPs

- ADCPs vary and are selected according to the application and deployment method
- Modern ADCPs like Nortek's Signatures measure more than just currents and are much more capable than traditional ADCPs
- Advances in technology and emerging new markets drive ADCP functionality



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Questions?

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